REMARKS

The Chenchick et al. Patent USP 6,087,102 Does Not Anticipate Each Element of The Claimed Invention.

> The present application claims "providing a plurality of antibodies each having a signaling element when each member of the plurality of antibodies is identified as having specific binding affinity to an expression product of the gene sequence."

This limitation is not found in the Chenchick reference.

Furthermore, the identifying step of the present application:

> "Identifying differential gene expression between the at least two distinct biological conditions by correlating differences in the antibody binding reaction in the at least two samples with expression of the gene sequence identified with the number of the plurality of antibodies"

is not found in the Chenchick reference.

The Chenchick reference is a conventional example of a protein chip when the size of the member bound to the array assists in the identification of binding events. The so-called "probe" in the Chenchick disclosure is analogous to any individual member of the binding antibodies of the present invention. However, as is made clear by the Chenchick specification, there is no correlation between the specific antibodies used in the reaction and the specific gene that may be subject to differential expression analysis. At column 10, lines 66 to column 11, line 2, the applicants notes that multiplex analysis requires the use of different probe molecules that are distinguishably labeled with different phlorophores. This approach demonstrates that the approach of Chenchick does not assign a specific gene expression event to a particular antibody used in the assay. The Chenchick specification also states that "the target expression level in the particular tissue being analyzed can be derived from the intensity of the detected signal. Chenchick also uses housekeeping genes to provide a control signal level to calibrate a signal provided by a particular probe. Thus, although Chenchick note that the array described therein can be used for differential expression analysis, the differential expression is not detected by the absent fact of the binding reaction of a particular antibody that is linked to a particular gene.

Bandaru Does Not Disclose The Element of the Pending Claims Identified in the Previous Action.

Bandaru does not disclose the method step of the present claims, specifically independent claim 14 recites:

> providing a plurality of antibodies each having a signaling element wherein each member of the plurality of antibodies is identified as having specific binding affinity to an expression product of a gene sequence.

The Examiner cites to different portions of Bandaru (column 49, lines 62-64; column 50, lines 32-45; etc). However, Bandaru still binds capture probes to the addresses of an array. This type of assay only yields information about a particular species (22109) that is the pre-determined target at the assay. As has been noted previously, the array and assays of Bandaru do not use the antibody binding events across the array for de novo expression profiling. In the present invention, gene expression information in a tissue sample is derived from the differential binding reactions of the "plurality of antibodies" reacting at two discrete sites of the array and when each is identified with an expression product of a gene sequence.

The reference to a two dimension array that the Examiner relies on for the use of the "at least two samples" of the present claims also does anticipate the element of the pending claims. Even in this example, the Bandaru array places the capture probe in the array and reacts sample with the bound probe. The present claims distinguishing this approach by reciting the reaction of specific gene-identifying antibodies across a range of protein samples. Bandaru simply does not disclose analyzing gene expression in this manner.

The Examiner's reference to column 51, at page 7 of the Office Action, relies of the description in Bandaru of a two dimensional array where "each address at the plurality being positionally distinguishable from each other address of the plurality having a unique capture probe..."

In each case the array is contacted with a cell-derived sample.

The present claims use a different approach where cell-derived (human) samples are interrogated with antibodies have a gene identified therewith.

Wagner et al Does Not Anticipate the Presently Claimed Method

At page 8 of the Office Action, the Examiner refers to column 37, lines 54-67 and column 26, line 37 through column 28, line 26. However, these sections of Wagner are silent on the method step of containing two tissue samples onto an array to obtain gene expression analysis. Again, Applicants note that Wagner et al. specifically state:

> Typically, only one type of protein-capture agent is present on a single patch of the array. If more than one type of protein-capture agent is present on a single patch, all of the protein-capture agents of that patch must share a common binding partner. For instance, a patch may comprise a variety of polyclonal antibodies to the same antigen (although, potentially, the antibodies may bind different epitopes on that same antigen).

Using this approach, Wagner et al. cannot perform the method step of claim 14 quoted above wherein "providing a plurality of antibodies . . . wherein each member of the plurality of antibodies is identified as having specific binding affinity to an expression product of a gene sequence. . . ." Because this element is necessarily lacking from Wagner et al., Wagner et al. cannot anticipate under Section 102(a).

Applicant also notes that none of the above references meet the limitations of dependent claim 15 wherein antibodies are raised by in vivo immunization of a gene sequence. The citation to columns 26-28 at Wagner does not disclose the claimed element.

In light of the above, applicant requests favorable consideration and allowance of all of the newly presented claims. If the Examiner has any questions regarding the foregoing, or if the Examiner believes that an interview would facilitate the examination of this application, or if any additional information is required, the Examiner is invited to contact the undersigned at 949/567-6700, X 7740.

Applicant	:	Moncef Jendoubi
Appl. No.	:	09/930,715
Examiner	:	My-Chau T. Tran
Docket No.	:	705403.6 (formerly 266/226)

The Commissioner is authorized to charge a three month extension fee of $510.00 to ORRICK, HERRINGTON & SUTCLIFFE LLP's Deposit Account No. 150665. The Commissioner is also authorized to charge all applicable fees to ORRICK, HERRINGTON & SUTCLIFFE LLP's Deposit Account No. 150665 and to credit any overpayments to said Deposit Account No. 150665.

Respectfully submitted,
ORRICK, HERRINGTON & SUTCLIFFE LLP

Dated: November 3, 2005

By: _____
Kurt T. Mulville
Reg. No. 37,194

Orrick, Herrington & Sutcliffe LLP
4 Park Plaza, Suite 1600
Irvine, CA 92614-2558
Tel. 949-567-6700
Fax: 949-567-6710
Customer Number: 34313